



6712-01

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 25

[IB Docket No. 06-123, FCC 17-49]

Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.8 GHz and the 24.75- 25.25 GHz Frequency Bands for Feeder Links to the Broadcasting-Satellite Service and for Satellite Services Operating Bi-Directionally

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: The Federal Communications Commission adopts technical rules to mitigate ground-path interference between the Digital Broadcasting Satellite Service (DBS) and the Broadcasting-Satellite Service (BSS) in the 17.3-17.8 GHz band to protect consumers and foster more rapid deployment of services, greater investment, and new innovation.

DATES: Effective **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

FOR FURTHER INFORMATION CONTACT: Sean O'More, 202-418-2453, or if concerning the information collections in this document, Cathy Williams, 202-418-2918.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Third Report and Order, FCC 17-49, adopted April 21, 2017, and released April 25, 2017. The full text of the Report and Order is available at https://apps.fcc.gov/edocs_public/attachmatch/FCC-17-49A1.pdf. It also are available for inspection and copying during business hours in the FCC Reference Information Center, Portals II, 445 12th Street SW., Room CY-A257, Washington, DC 20554. To request materials in accessible formats for people with disabilities, send an email

to FCC504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (TTY).

Synopsis

This Report and Order adopts new rules to mitigate interference from DBS feeder-link earth stations to BSS consumer earth terminals (ground path interference) in the 17.3-17.8 GHz band. We adopt a rule allowing currently-licensed DBS feeder link earth stations to continue operations under the terms of their current licenses, and to expand their facilities provided that new antennas are constructed within one kilometer of current antennas and the aggregate power-flux density of the station at any point does not increase.

We adopt a methodology for determining a coordination zone for new DBS feeder-link earth stations, and require applicants for new DBS feeder-link earth stations to coordinate with BSS licensees to achieve agreement on interference mitigation. We adopt rules specifying the information applicants for new DBS feeder-link earth stations must provide for the purposes of coordination.

Paperwork Reduction Act

This document contains new and modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. It will be submitted to the Office of Management and Budget (OMB) for review under section 3507(d) of the PRA. OMB, the general public, and other Federal agencies will be invited to comment on the new or modified information collection requirements contained in this proceeding in a separate Federal Register notice.

Pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4), we previously sought specific comment on how the Commission might further reduce the information collection burden for small business concerns with fewer than 25

employees. We received no comments on this issue. We have assessed the effects of the revisions adopted that might impose information collection burdens on small business concerns, and find that the impact on businesses with fewer than 25 employees will be an overall reduction in burden.

Congressional Review Act

The Commission will send copies of this Report and Order to Congress and the General Accountability Office pursuant to the Congressional Review Act, 5 U.S.C. 801(a)(1)(A), and will send a copy including the final regulatory flexibility act analysis to the Chief Counsel for Advocacy of the Small Business Administration, in accordance with section 603(a) of the Regulatory Flexibility Act, 5 U.S.C. 601, et seq. (1981).

Final Regulatory Flexibility Analysis

As required by the Regulatory Flexibility Act (RFA), an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the Further Notice of Proposed Rulemaking in the Matter of Comprehensive Review of Licensing and Operating Rules for Satellite Services. The Commission sought written public comment on the proposals in the NPRM, including comment on the IRFA. No comments were received on the IRFA. This Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.

Need for, and Objectives of, the Rules

The objective of the Report and Order is to adopt processing and service rules for the 17/24 GHz Broadcasting-Satellite Service (BSS) which will address potential interference scenarios which arise in the reverse band operating environment. The rules will mitigate against ground path interference. Specifically, we adopt criteria to facilitate sharing in the 17 GHz bands by BSS and Direct Broadcast Satellite (DBS) services. These new rules will introduce a new generation of broadband services to the public, providing a mix of local and domestic video,

audio, data, video-on-demand, and multimedia services to consumers in the United States. In some cases, these new BSS services will complement existing DBS services. By these actions, we facilitate the introduction of new and innovative services to consumers in the United States and promote increased competition among satellite and terrestrial services.

Summary of Significant Issues Raised by Public Comments in Response to the IRFA

No party filing comments in this proceeding responded to the IRFA, and no party filing comments in this proceeding otherwise argued that the policies and rules proposed in this proceeding would have a significant economic impact on a substantial number of small entities. The Commission has, nonetheless, considered any potential significant economic impact that the rule changes may have on the small entities which are impacted. On balance, the Commission believes that the economic impact on small entities will be negligible.

Response to Comments by the Chief Counsel for Advocacy of the Small Business

Administration

Pursuant to the Small Business Jobs Act of 2010, the Commission is required to respond to any comments filed by the Chief Counsel for Advocacy of the Small Business Administration, and to provide a detailed statement of any change made to the proposed rules as a result of those comments. The Chief Counsel did not file any comments in response to the proposed rules in this proceeding.

Description and Estimate of the Number of Small Entities to Which the Rules May Apply

The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the rules adopted herein. The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.” In addition, the term “small business” has the same meaning as the term “small business concern” under the Small

Business Act. A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA). Below, we further describe and estimate the number of small entity licensees that may be affected by the adopted rules.

Satellite Telecommunications. The SBA has developed a small business size standard for the two broad census categories of “Satellite Telecommunications” and “Other Telecommunications.” Under both categories, a business is considered small if it has \$13.5 million or less in annual receipts. The category of Satellite Telecommunications “comprises establishments primarily engaged in providing point-to-point telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications.” For this category, Census Bureau data for 2007 show that there were a total of 512 satellite communications firms that operated for the entire year. Of this total, 307 firms had annual receipts of under \$10 million per firm, and 26 firms had receipts of \$10 million to \$24,999,999 per firm. Consequently, we estimate that the majority of Satellite Telecommunications firms are small entities that might be affected by our action.

The category of Other Telecommunications “comprises establishments primarily engaged in (1) providing specialized telecommunications applications, such as satellite tracking, communications telemetry, and radar station operations; or (2) providing satellite terminal stations and associated facilities operationally connected with one or more terrestrial communications systems and capable of transmitting telecommunications to or receiving telecommunications from satellite systems.” For this category, Census Bureau data for 2007 show that there were a total of 2,383 firms that operated for the entire year. Of this total, 482

firms had annual receipts of under \$25 million. Consequently, we estimate that the majority of Other Telecommunications firms are small entities that might be affected by our action.

Space Stations (Geostationary). Commission records reveal that there are 44 space station licensees. We do not request or collect annual revenue information concerning such licensees, and thus are unable to estimate the number of geostationary space station licensees that would constitute a small business under the SBA definition cited above, or apply any rules providing special consideration for geostationary space station licensees that are small businesses.

17 GHz Transmitting Earth Stations. Currently there are approximately 47 operational earth stations in the 17.3-17.7 GHz bands. The Commission does not request or collect annual revenue information, and thus is unable to estimate the number of earth stations that would constitute a small business under the SBA definition.

Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities

Under the Commission's existing rules, all requests for space station authorizations are required to be in the form of a comprehensive proposal submitted on the relevant FCC forms. Similarly, to obtain an earth station authorization, applicants must file the appropriate forms as required by the Commission's rules. In addition to our existing requirements, in this Third Report and Order we adopt certain specific requirements for 17/24 GHz BSS earth and space station applications.

Earth Station Applications. Applications for feeder-link earth stations operating in the 17.3-17.8 GHz band (Earth-to-space) and providing service to geostationary satellites in the 17/24 GHz BSS must include, for each new or modified earth station, a certificate of

coordination agreement with any holder of a blanket license for BSS receive earth terminals located within a coordination distance of the feeder-link earth station established by ITU rules.

The Commission does not expect significant costs to be associated with these rules. Therefore, we do not anticipate that the burden of compliance would be greater for smaller entities.

Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

The RFA requires that, to the extent consistent with the objectives of applicable statutes, the analysis shall discuss significant alternatives such as: (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.¹

The rules adopted herein are necessary to protect 17/24 GHz BSS subscribers from DBS feeder links (ground-path interference). These rules will enable the efficient operation of the 17/24 GHz BSS, which is expected to introduce a new generation of broadband services to the public, and ensure that consumers enjoy the continued uninterrupted operation of DBS.

The technical rules adopted here are the least intrusive option considered in terms of compliance requirements and will be the most effective in terms of facilitating the licensing of operations in the 17/24 GHz BSS without causing harmful interference to other authorized radiocommunication services. We have considered alternatives, including subjecting existing

¹ 5 U.S.C. 603(c)(1), (c)(4).

DBS uplink facilities to new interference-mitigation requirements and establishing protection zones for existing DBS uplink facilities, and believe the rules as adopted provide the most equitable solution to the potential interference problems posed by the operations in 17/24 GHz BSS. By requiring that technical showings be made prior to operation, we anticipate that there will be far fewer instances of harmful interference between these two services. This will have a positive economic impact on all satellite space station and earth station licensees, including small entities.

Incorporation by Reference

This final rule incorporates by reference an element of the ITU Radio Regulations, Edition of 2012, into part 25 for specific purposes:

ITU Radio Regulations, Appendix 7, “Methods for determination of the coordination area around an earth station in frequency bands between 100 MHz and 105 GHz,” Section 3, “Horizon antenna gain for a receiving earth station with respect to a transmitting earth station,” Table 9b.

This material is available for free download at <http://www.itu.int/pub/R-REG-RR-2012>. In addition, copies of all of the materials are available for purchase from the ITU through the contact information provided in § 25.108, and are available for public inspection at the Commission address noted in the rule as well.

Appendix 7, Section 3 establishes the methodology and values for determining coordination areas between transmitting earth stations and receiving earth stations in the satellite services. The § 25.203(m) requires applicants for new DBS feeder-link earth stations to use the values in Table 9b, as amended by § 25.203(m), to determine the area within which they must coordinate with BSS licensees.

Ordering Clauses

IT IS ORDERED that, pursuant to the authority contained in sections 1, 4(i), 4(j), 7(a), 301, 303(c), 303(f), 303(g), 303(r), 303(y), and 308 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154(i), 154(j), 157(a), 301, 303(c), 303(f), 303(g), 303(r), 303(y), 308, this Third Report and Order IS ADOPTED.

IT IS FURTHER ORDERED that part 25 of the Commission's rules, 47 CFR 25 IS AMENDED.

IT IS FURTHER ORDERED that this Third Report and Order SHALL BE effective **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, except the amendments to §§ 25.108 and 25.203, 47 CFR 25.108 and 25.203, which contain new or modified information collection requirements that require approval by the Office of Management and Budget under the Paperwork Reduction Act, WILL BECOME EFFECTIVE after the Commission publishes a notice in the Federal Register announcing such approval and the relevant effective date.

IT IS FURTHER ORDERED that, pursuant to section 801(a)(1)(A) of the Congressional Review Act, 5 U.S.C. 801(a)(1)(A), the Commission SHALL SEND a copy of this Report and Order to Congress and to the Government Accountability Office.

IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Third Report and Order, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

List of Subjects in 47 CFR Part 25

Administrative practice and procedure, Earth stations, Incorporation by reference, Satellites.

FEDERAL COMMUNICATIONS COMMISSION.

Marlene H. Dortch,
Secretary.

Final Rules

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR part 25 as follows:

PART 25 – SATELLITE COMMUNICATIONS

1. The authority citation for part 25 is revised to read as follows:

Authority: Interprets or applies 47 U.S.C. 154, 301, 302, 303, 307, 309, 310, 319, 332, 605, and 721, unless otherwise noted.

2. Amend § 25.108 by redesignating paragraphs (b)(2) through (5) as paragraphs (b)(3) through (6) and by adding new paragraph (b)(2) to read as follows:

§ 25.108 Incorporation by reference.

* * * * *

(b) * * *

(2) ITU Radio Regulations, Volume 2: Appendices, Appendix 7, “Methods for the determination of the coordination areas around an earth station in the frequency bands between 100 MHz and 105 GHz,” Edition of 2012, <http://www.itu.int/pub/R-REG-RR-2012>.

Incorporation by reference approved for § 25.203(m).

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4. Amend § 25.203 by adding paragraph (m) to read as follows:

§ 25.203 Choice of sites and frequencies.

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(m) Feeder links to DBS space stations:

- (1) Each applicant for a license to construct a new FSS earth station to provide feeder-link service to DBS space stations in the frequency band 17.3-17.8 GHz, or to modify any such station currently authorized except where the modification is for a new station within one

kilometer of a currently-licensed earth station and modification will not increase the aggregate pfd, measured at any point 3-10 meters above the ground, above that generated by the current earth station, shall identify a coordination zone around its proposed new or modified earth station by the methodology outlined in Annex 3 of Appendix 7 of the ITU Radio Regulations, using the following values for the parameters in Table 9b of Annex 7 of Appendix 7:

Space service designation in which the transmitting earth station operates		Fixed-satellite		
Frequency bands (GHz)		17.3-17.8		
Space service designation in which the receiving earth station operates		Broadcasting-satellite		
Orbit		GSO		
Modulation at receiving earth station		N (digital)		
Receiving earth station interference parameters and criteria	p_o (%)	0.015		
	n	2		
	p (%)	0.015		
	N_L (dB)	1		
	M_s (dB)	In the area specified in 47 CFR § 25.209(w)(1) and (4)	In the area specified in 47 CFR § 25.209(w)(2)	In the area specified in 47 CFR § 25.209(w)(3)
		4.8	3.0	1.8
	W (dB)	4		

Receiving earth station parameters	G_m (dBi)	36		
	G_r	0		
	ε_{min}	20°		
	T_e (K)	150		
Reference bandwidth	B (Hz)	10^6		
Permissible interference power	$P_f(p)$ (dBW) in B	-146.8	-149.8	-152.8

(2) Each applicant for such new or modified feeder-link earth station shall provide the following information to a third-party coordinator of its choice for use in coordination required by this paragraph:

- (i) The geographical coordinates of the proposed earth station antenna(s);
- (ii) Proposed operating frequency band(s) and emission(s);
- (iii) Antenna diameter (meters);
- (iv) Antenna center height above ground and ground elevation above mean sea level;
- (v) Antenna gain pattern(s) in the plane of the main beam;
- (vi) Longitude range of geostationary satellite orbit (GSO) satellites at which an antenna may be pointed;
- (vii) Horizon elevation plot;
- (viii) Antenna horizon gain plot(s) determined in accordance with the procedure in Section 2.1 of Annex 5 to Appendix 7 of the ITU Radio Regulations;
- (ix) Minimum elevation angle;

(x) Maximum equivalent isotropically radiated power (e.i.r.p.) density in the main beam in any 1 MHz band;

(xi) Maximum available RF transmit power density in any 1 MHz band at the input terminals of the antenna(s);

(xii) A plot of the coordination distance contour(s) and rain scatter coordination distance contour(s) as determined by Table 2 of Section 3 to Appendix 7 of the ITU Radio Regulations.

(3) Each applicant for such new or modified feeder-link earth stations shall file with its application memoranda of coordination with each licensee authorized to construct BSS receive earth stations within the coordination zone.

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